

## **AMENDMENTS TO THE SPECIFICATION AND ABSTRACT**

**Please replace the paragraph beginning at page 3, line 25, with the following rewritten paragraph:**

According to the present invention, there is provided a method of determining radioactive nuclides comprising:

inputting a data of pulses incident to an  $\alpha$ -ray detector in a computer;  
obtaining and plotting a time distribution of the incident pulses by using a very short time measuring timer;  
obtaining from the plotted time distribution of the incident pulses, the following whole generating probability  $P(t) dt$  from a parent nuclide to a disintegrated product thereof by fitting the linear originated in a random event corresponding to the background and the non-linear originated in correlated event of the parent nuclide-disintegrated product by using least squares method

$$P(t) dt = \{ \alpha_t \cdot \exp(-\lambda t) \cdot \lambda + C \} dt$$

wherein,

$P(t) dt$ : the probability of starting from an optional pulse and expiring at the event within a very short time  $dt$  after  $t$  milliseconds,

$\lambda dt$ : the probability of generating the correlated events within a very short time  $dt$  after  $t$  milliseconds,

$C dt$ : the probability of generating the random events within a very short time  $dt$  after  $t$  milliseconds,

$\alpha_t$ : the probability that the events are caused by the correlated events;  
subtracting the random events portion from the  $P(t)$  to thereby extract the correlated events portion; and

dividing the extracted correlated events portion by the measured time, the amount of supplied sample and the counting efficiency to thereby obtain the radioactivity per unit.

**Please replace the paragraph beginning at page 7, line 21, as previously amended in the Response filed March 28, 2006, with the following rewritten paragraph:**

Now, the whole generating probability  $P(t) dt$  becomes as follows:

$$\begin{aligned}P(t) dt &= P_A(t) dt + P_B(t) dt + P_C(t) dt + P_D(t) dt \\&= \Sigma (C \cdot t)^N / N! \exp(-Ct) \cdot [\alpha_t \exp(-\lambda t) \cdot \lambda + C] dt\end{aligned}$$

and, since the following equation

$$(C \cdot t)^N / N! = \exp(Ct)$$

is obtained by the Maclaurin's expansion, the probability of the correlated events from the whole parent nuclides to the disintegrated progenies thereof becomes as follows:

$$P(t) dt = \{ \alpha_t \cdot \exp(-\lambda t) \cdot \lambda + C \} dt.$$

**Please replace the paragraph beginning at page 8, line 10, as previously amended in the Response filed March 28, 2006, with the following rewritten paragraph:**

Conversely speaking, as being understood from the foregoing, the  $P(t) dt$  is obtained from the time distribution of the plotted incident pulses, by fitting the linear originated in the random events corresponding to the background and the non-linear originated in the correlated events of parent nuclide-disintegrated progenies by using least squares method:

$$P(t) dt = \{ \alpha_t \cdot \exp(-\lambda t) \cdot \lambda + C \} dt.$$

The random events portion is then subtracted from the  $P(t) dt$  to thereby extract the correlated events portion from the parent nuclide to the disintegrated products thereof.